



Manatee Captures and Health Assessments

Over the last decade, the USGS has successfully captured, examined, and released 201 manatees in Crystal River, Florida, creating an extensive sample and data archive that will be used in the future to gauge the health and status of the population. Of those 201 manatees, 120 were males and 81 were females. Research in Crystal River and the Gulf of Mexico is providing needed baseline health information on West Indian manatees. This is the ninth year of the wild manatee study at the Crystal River National Wildlife Refuge.



Manatee capture team in Crystal River, Florida

Currently, more than 600 wild manatee health assessments have been conducted in Florida and provides a diagnostic tool that is a valuable component in our arsenal to determine the fitness of this endangered population. Parameters are examined related to environmental and biomedical issues confronting the manatee and their ecosystem. Marine mammals, such as manatees, are often used as sentinels for emerging threats to the ocean and aquatic environments, as well as determining potential threats to human health.

A two-team approach is used to capture and exam manatees. The Capture Team and Assessment Team both consist of biologists and veterinarians representing federal, state and local governmental agencies and universities. All procedures are conducted by experienced biologists and veterinary personnel. Manatees selected for capture are circled with a large net which is then pulled onto the beach by the capture team. Once on shore, the manatees will receive a

complete medical examination by veterinarians on the assessment team. Blood is drawn under sterile conditions from the flipper, centrifuged for plasma and serum separation, and submitted for routine blood analyses. Other laboratory tests are employed when necessary. A manatee physical exam includes the following:

- General appearance and activity
- Body condition scoring
- Photo-documentation of lesions and wounds
- Heart/Pulse rate
- Respiratory rate
- Temperature
- Body weight
- Complete body measurements (length and girths)
- Eye exam
- Implantation of PIT tags
- Subcutaneous blubber layer measurements
- Analysis of blood, feces, urine, milk and skin
- Reproductive parameters and status

Improvements in the handling of wild manatees are possible by monitoring individuals using ECG and evaluating inflammatory response to injury or disease. Blood biochemistry and hematology research has benefited manatee clinical medicine by establishing normal ranges for veterinary evaluations of healthy wild manatee populations. Other published studies incorporating assessment data include research on several biological subjects including:

- Evaluate hormones for determining pregnancy
- Monitor stress levels during capture and handling
- Gauge immune response
- Determine contaminant levels
- Compare stable isotope signatures
- Conduct genetic analyses
- Culture microbes
- Examine parasites and epiphytes
- Analyze fecal samples

The research data gathered today will be used to evaluate the condition of manatees in the future. The winter population of manatees in Crystal River is currently estimated to be about 700 individuals. With reduction of artificial warm water sources such as power plants in the future, it is predicted that the manatee population in Crystal River will continue to increase. The monitoring of this increase in population growth will allow us to determine the impact on available carrying capacity and the ecosystem as a whole.

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